

CLIMATE BUDGETING PROCESSES

Recommendations of the Montgomery County Climate Change Budgeting Process Workgroup

This report summarizes the recommendations of the Montgomery County Climate Change Budgeting Process Workgroup. The workgroup consisted of 15 volunteers from the County who were selected for participation based on their experience with public budgeting, greenhouse gas control and mitigation options, and environmental management. The workgroup consulted closely with County officials and experts from the Office of Management and Budget (OMB) and the Department of Environmental Protection (DEP) to identify and vet practical steps that the County could take to assess and budget for climate-related actions.

The goal of these actions is to help achieve the County's target of cutting community-wide greenhouse gas (GHG) emissions by 80 percent by 2027 (relative to the 2005 baseline) and eliminating 100 percent of GHG emissions by 2035, as laid out in the December 5, 2017, Emergency Climate Mobilization Resolution No. 18-974. Based on the most recent Metropolitan Washington Council of Governments greenhouse gas inventory for GHG emissions through 2018, Montgomery County has reduced emissions by 19 percent from 2005 levels and will need to reduce community-wide emissions an additional 61 percentage points by 2027 to reach the 80 percent reduction goal – an average of nearly 7 percent annually over nine years (2019 – 2027). Achieving this goal will require action well beyond County operations and programs; it must also include businesses and residents on a broad scale.

The workgroup focused on assisting the County with the following:

- Near-term methods to utilize a climate lens in budgetary decision-making (to be implemented during the current fiscal year)
- Potential checklists, forms, and/or qualitative questions to evaluate climate impacts of projects
- Environmental reporting and budgeting: connecting environmental data with budget planning
- Climate budget tagging: classifying climate-relevant budget expenditures
- Carbon budgets: representing the amount of carbon emissions permitted over time
- Consideration of additional longer-term ideas for more fully integrating a climate lens into budgetary decision-making, such as internal carbon taxes (assigning a monetary value to carbon emissions).

The recommendations here are intended to work within the County's existing budget processes and are the consensus results of workgroup consultations. The recommendations address steps that could be undertaken or seriously considered in three timeframes, which make up the three main sections of this report:

1. **Near term:** the current decision-making process for the County's FY 2022 budget;
2. **Mid-term:** analytic efforts over the coming months that can help support development of future years' budgets once the Climate Action and Resilience Plan (CARP) is completed;
3. **Longer term:** the formulation and development of the County's budgets for FY 2023-25

The report also includes: 1) a section on "Additional Considerations," noting potential recommendations and ideas not addressed in detail but worthy of further consideration; and 2) appendices with a list of

tools and resources, including the tools cited in this document (Appendix A) and information on other jurisdictions' efforts to incorporate climate impacts into their planning and budgeting process, as well as other resources (Appendix B).

The workgroup recognizes that the recommendations here warrant deeper review and assessment by County officials and staff to ensure they are as feasible and useful as intended. As that review is at an early stage, these proposals are the recommendations of the workgroup, and not necessarily the County officials and experts who contributed their essential expertise to this process. Additionally, the workgroup recognizes it is providing these recommendations before the CARP is complete. Many workgroup members expressed a willingness to reconvene with County staff after the final CARP is complete, and before the FY 23 budget cycle begins.

A. NEAR-TERM RECOMMENDATIONS FOR THE FY22 CLIMATE BUDGET PROCESS

The workgroup considered several “near-term” approaches to integrating a climate lens into the budget process that could be implemented—or at least begun—in the current fiscal year. FY21 started on July 1, 2020, and the FY22 budgeting process began in September 2020. The workgroup’s focus was on: potential guidance to county departments, tools that can begin collecting climate-relevant information during the current budget-planning cycle, suggestions for training and capacity building, the need for ongoing technical assistance to County departments, and proposed implementation steps.

1. Potential guidance to County departments:

In the guidance it offers to departments, the County should consider highlighting the community-wide goals of an 80 percent reduction in GHGs by 2027 (relative to the 2005 baseline) and total elimination by 2035. The guidance could also note that actions can include carbon sequestration (i.e., drawing down CO₂ from the air), as well as those that will promote the County’s resilience to unavoidable climate change.

- a. Departments should be encouraged to begin identifying how they would achieve these types of reductions in their own operations, options for less dramatic cuts (such as a 50 percent cut in current emissions by 2027), and options for accelerated cuts (such as 100 percent cuts in current emissions before 2035). These targets can provide decision makers with a sense of total and incremental costs for different options. The process would also highlight to departments and central analytic-support entities, such as OMB and DEP, what type of information will be needed to conduct a deeper, actionable assessment of options for the FY23 budget.
- b. Departments should also be asked to begin considering their potential impacts on community-wide GHG emissions, and how their programs could contribute to achievement of the County’s 80 and 100 percent reduction goals, including sequestering carbon. As the departments have very different types of programs (e.g., mass transit vs. public health), the policy and program levers that they have available will differ greatly in the scale of their potential impacts (and the obviousness of these impacts).
- c. The goal of this work would be to start to identify what reduction of GHG emissions, carbon sequestration, and community resilience can be achieved through departmental spending programs (both in terms of internal operations and community-facing impacts) and what residual would need to be addressed through regulatory, statutory, and other means. *It is not expected that significant progress would be made in the FY22 budget process, given the timing,*

which is both very late in the planning cycle and before release of the CARP. However, some sort of engagement of the departments could begin, if only in an introductory way and to identify a realistic process for future fiscal years. We are not recommending that the County defer important GHG reduction actions in FY 22 that are obvious and/or planned, but rather that a comprehensive climate budgeting process would not be fully implemented until FY 23 and beyond.

2. Tools to put into effect for developing the FY22 budget:

- a. **Public Services Program (PSP) climate tab page (developed by OMB).** Collecting the basic climate-impact information on the tab can assist in budget development. (Consider adding “carbon-sequestration” as a possible impact, “heat” to the list of resilience concerns, and the ability to attach links to supporting documents). The workgroup supports providing the climate tab to all 40 departments for FY 22 budget formulation. We recommend revisiting the form and its implementation in Spring 2021 and periodically considering revising the tab for continued use. (See Appendix A for a link to the climate tab page.)
- b. **Capital Improvements Program (CIP) checklist (developed by OMB/DEP).** Minor revisions previously suggested may be helpful (e.g., rate proposals as having positive, negative, or neutral climate impacts (or color coding)). We recommend OMB start using this rating with at least selected capital budget amendments for FY22, revisiting the form and its implementation in Spring 2021, and periodically considering adjustments. Assuming its initial implementation is useful, it should be rolled out fully for FY23 budget development, with periodic revisiting. (See Appendix A for a link to the CIP checklist.)
- c. **“Technical Workgroup Recommendations/Department Budget Matrix.”** The Matrix is a potential resource or template for department staff trying to think more deeply about how their departments implement the range of climate actions. The Matrix currently includes the goals and strategies from the five technical workgroups, though these can be replaced with CARP goals and actions in the future. Also, the Matrix is potentially useful as an analytic resource for OMB and/or cross-departmental climate workgroups to identify joint efforts, program interdependencies, and co-benefits from specific actions. It can also be adapted and used more broadly in subsequent FYs after the CARP is completed, especially to capture budget and performance measure information. (See Section A.6 below for additional detail and Appendix A for a link to the Matrix.)
- d. **Appeals.** Given the compressed time frame for this year’s informal climate budget tagging (the steps described here), we recommend enabling departments to highlight newly apparent climate impacts (such as the benefits of particular program options) at the appeals stage of budget decision making when departments have a last chance to impact decisions.

3. Capacity building/training/ongoing technical assistance:

- a. **Initial training efforts.** In the near-term, we recommend rolling out basic training on the tools for County departments broadly (recognizing that OMB plans to this effect, particularly for the PSP, are underway). This includes:
 - 1) *Training on the climate change tab for PSP.* We suggest a basic level of training for at least some staff in all 40 departments. Those staff could be designated by their respective departments. More in-depth training could be available for Climate Ambassadors, who are

designated by their departments to be leads or co-leads on climate budgeting issues. For departments with significant climate-related impacts, multiple Ambassadors could be designated to promote diffusion of knowledge and techniques into different programs, as well as share best practices from across programs. Use of the PSP “characteristics” page and the OMB “concept manual” could be part of this training.

2) *Training on the CIP checklist.* Similarly, training could be provided on the checklist for departments with significant climate-related assets and investment programs, potentially with a focus on use of the checklist for departments with relevant FY 22 budget amendments. Other departments could also participate to gain familiarity with the tools and concepts, along with the Climate Ambassadors. We envision a relatively modest initial training effort, recognizing that more in-depth training will be needed at later stages and fiscal years.

- b. **Potential webinars/training topics.** Initial topics could include a broad overview of climate change issues, the County’s overarching emissions goals, and the goals of the PSP budget tab and other resources, and the CIP checklist. Important points include that: (1) some investments can have a disproportionate impact in leveraging positive changes (e.g., a DEP or building permits staff member who can help guide effective private-sector actions), and (2) the focus is the community as a whole, not just county operations. As OMB has noted, training will also include basic information and practice opportunities on how to use the forms, with examples and considerations.

Asking DEP staff to participate in OMB kickoff meetings could help familiarize department staff with the County’s climate goals and potential implications for their programs and projects. Departments will be at different levels of pre-existing engagement and knowledge, and these discussions could be tailored to bring different departments along, consistent with their circumstances.

Additional webinars or sessions could provide more in-depth information for: department Climate Ambassadors; selected departments with greatest climate effects (e.g., DOT, DGS, DEP); and departments with expected amendments to capital projects. Topics could include the CARP, use of the Technical Workgroup Recommendations/Department Budget Matrix, identifying co-benefits, initial steps toward more exact climate impact estimates, etc. Investing in deeper training for Ambassadors and other key staff can enable them to become (over time) part of cross-department workgroups capable of considering budget/climate-goal overlaps, co-benefits, comparability and consistency of estimates across programs, etc.

4. **Develop capacity and a system for continued technical assistance/review:** This could include an expert response team of OMB/DEP/County Executive’s Office (CEO)/Ambassadors, use of consultants, and/or outreach and use of shared best practices with other jurisdictions.

OMB and DEP have also suggested potential adoption of a review process mirrored on the current process for IT projects, with substantive review by an inter-departmental panel with expertise on climate. A possible pilot approach is described below in the Mid-Term Recommendations section.

5. Implementation/phase in:

- a. **PSP budget tab and other resources (characteristics page and concept manual).** Begin use with all departments in FY22 (OMB is pursuing this), with associated training.
 - b. **CIP budget checklist.** Begin use for amendments (or selected amendments) in all departments in FY22, with associated training.
 - c. **The Matrix.** Use as a resource for departments in FY22, with associated training, and as a potential analytic tool for OMB and others in decision making process in future years.
 - d. **Capacity building and expert technical assistance and review team.** Develop FY22 training to deepen ongoing capacity (e.g., Climate Ambassadors and other key staff), and develop and pilot an expert review panel (more below).
 - e. **Revisit implementation, plan/revise for next budget cycle.** Spring 2021 (more under Mid-Term Recommendations below).
6. **Possible uses for the Technical Workgroup/Department Budget Matrix:** The Matrix could help the budget office and program offices show which departments are responsible for key climate actions, and include budget information on direct and related program/capital project activities. The Matrix could include information about program/project budget interdependencies and co-benefits, and in the longer-term, metrics (GHG emissions reduced, etc.). Finally, it could help to focus Climate Ambassadors and interdepartmental teams on concrete goals.

Here are some examples of how a goal-driven team process might work:

Electrify the bus fleet. An interagency team including the Department of Transportation and Montgomery County Public Schools could be involved and each would have an associated budget. There might be *interdependencies* with other departments for EV charging infrastructure, O&M, and public outreach if routes or schedules were affected. There also could be *co-benefits* with Health and Human Services because reduced bus emissions could reduce asthma rates.

Reduce vehicle miles traveled. DOT could be involved in public transit, but other departments may be involved in promoting telework, constructing bikeways, or designing more walkable communities. There may be *co-benefits* related to health, traffic congestion, and pedestrian safety with reduced car traffic.

Increase tree canopy to sequester carbon and reduce heat islands. An interdepartmental/interagency team from DEP, Housing and Community Development, and MNCPP could work on this goal. There could be *co-benefits* related to health (better air quality, reduced heat island effect and heat-related medical issues) and lower electricity costs for residents and businesses.

B. MID-TERM RECOMMENDATIONS FOR ANALYZING COUNTY CLIMATE BUDGET PROCESSES
(FY22 PLANNING INTO FY23)

The workgroup also considered and discussed with the County staff several analytic efforts that could be started in the coming months to help support development of future years' budgets and ensure that they support the County's climate goals. These mid-term steps include: 1) a County pilot to review and develop a methodology to assess climate impacts of selected PSP or capital budget items; 2) a taking-stock process to revisit and revise implementation of the initial near-term steps; and 3) reconsideration of these and other components of the County budget process in the context of the CARP, which will be completed and released during the mid-term period.

1. A County pilot to develop a methodology for review and estimation of climate impacts for selected budget proposals.

Working outside the formal fiscal year budget process, County staff have suggested undertaking a pilot to develop a methodology for reviewing selected budget proposals and estimating their climate impacts. This could be modelled on the existing process for reviewing IT projects. It would entail substantive review by the County's core climate team and formulation of potential methodologies to use more broadly across the budget into the future. It would seek to develop methods for assessing both mitigation and resilience effects (recognizing the latter is more challenging). DEP and OMB could take the lead on this.

2. Taking stock of implementation to date.

Many workgroup members expressed a willingness to reconvene with County staff to consider lessons from the initial near-term approach and assess fruitful next steps before the FY23 budget cycle begins. This process could consider successes and challenges from implementation of the initial FY22 budget cycle steps, implications of the County pilot noted above, and additional steps for moving effectively from qualitative to more quantitative estimates of climate impacts and for linking climate and financial data for decision making (also discussed below under Longer Term Recommendations).

In Spring 2021, the County will be better situated to revisit the near-term tools and processes, connect their strengths/limitations to longer term planning, and revise as needed. OMB has indicated its interest in periodically revisiting the PSP budget tab, "characteristics" data and the analysis derived from it, and the "concept manual" as part of the PSP budgeting process. Reassessing the form and usefulness of the CIP checklist, training and technical assistance approaches, and other tools and methods could also be part of this "taking stock" review.

At this point, the CARP will have been released and the County will have one budget cycle of implementation to inform development of more refined next steps consistent with the CARP's goals for institutionalizing the effective and timely linkage of climate and financial planning and reporting.

3. Revisiting and revising recommendations in the context of the CARP.

Finally, it will be critical to reconsider each of the initial steps in the context of the CARP and its implementation plans. Many budget workgroup members also served on technical workgroups that made recommendations for the CARP, and the group as a whole could reconvene with County staff after the CARP is released, and before the FY23 budget cycle begins. This could offer the opportunity to

ensure that the proposed components—and how they fit together—serve the County’s climate goals as effectively as possible. Bringing together this group or some iteration in or around March 2021 could help facilitate this process.

C. LONGER TERM RECOMMENDATIONS FOR FORMULATING AND DEVELOPING THE COUNTY’S BUDGETS (FY 2023-25)

The longer term recommendations are intended to suggest ways to further integrate climate considerations into the County’s budget development for fiscal years 2023 and beyond, supporting achievement of the County’s climate goals. The workgroup identified the following major groups of actions for consideration:

- Collecting data on the climate impacts of budget items and providing this data to budget decision makers;
- Developing and agreeing upon a decision-making framework for considering climate impacts in County budgets;
- Tracking progress and increasing transparency; and,
- Building capacity and awareness.

These actions are explained in greater detail below.

1. Collecting data on climate impacts

Following up on the near-term recommendations, the County should consider expanding the scope of data collected to assess climate impacts of budget items, beyond the initial forms developed in BASIS for PSP and the separate CIP checklist. The level of data requested will likely vary by type of budget item, and the processes developed for incorporating data of different types into the actual decision-making process. This could be implemented by making changes to data collection screens in BASIS, or by developing questionnaires outside BASIS that departments would complete and submit as attachments, as part of the budget submission (or possibly by other methods the County finds more feasible).

Over time, a standard methodology should be developed that describes the types of information to be collected for various types of projects, and how it will be used, with OMB providing guidance and training to departments on how to respond (in collaboration with DEP, CEO, and other departments as needed). This could be phased in to prioritize budget items that have relatively large impacts and to consider available expertise/capacity across different departments.

Simple procurements (e.g., purchases of off-the-shelf office supplies) could possibly be exempted from this requirement or be assigned a “standard” value for GHG impact based on product type and characteristics.

For larger/more complex projects, we recommend the County require departments to prepare a climate impact assessment. This would likely need to be done by OMB in consultation with DEP and other departments—and/or consultants or other outside resources—and could build on the methodological pilot described in the Mid-Term recommendations above (Section B.1). The County could provide departments with guidance that includes, for example, the different climate/GHG impacts for different types of projects, suggested GHG emissions reduction factors for different types of projects, and mitigation, sequestration, or adaptation measures that could help reduce climate/GHG impacts. Examples of questions to be asked could include:

- a. Does this project affect energy use, land clearing, or otherwise increase/reduce GHG emissions? (Already in place in BASIS/OMB checklist.)
- b. Does this project affect the vulnerability of assets to climate change (e.g., by locating new projects in a flood-prone area)?

Projects with potentially large impacts (based on energy use/building size/other thresholds) could receive a more in-depth review, which may need to be done with assistance from DEP, other departments, or outside consultants. This review could include:

- a. Quantified GHG impacts and/or vulnerability assessment
- b. Economic/cost-benefit analyses that take social cost of carbon into account. This will help prioritize project designs that have lower GHG emissions, that help sequester carbon, promote resilience, or have other benefits.

2. Decision-making

Along with collecting data on climate impacts, the County should develop guidance and/or rubrics for how these data are considered in budget decisions. We recognize that this is likely to be a challenging step, and will require further careful consideration if it is to be both feasible and useful in achieving the County's climate goals. This information should be made available to departments to assist them in preparing budget submissions that minimize climate impacts to the extent possible and provide sufficient explanation of remaining impacts to allow an informed decision.

Questions to be addressed in developing this guidance could include:

1. How do the climate benefits (or negative climate effects) of budget items influence funding decisions?
 - a) To what extent do budget items with inherent climate benefits receive higher priority in funding decisions?
 - b) To what extent do budget items that include mitigation or adaptation measures to offset negative climate impacts receive higher priority?
 - c) How will the County disincentivize budget items that do not try to account for and address their negative climate impacts?
2. How will the County balance higher costs for budget items that include mitigation/adaptation measures with their projected climate benefits? (This could include metrics such as dollar/ton of GHG reduction associated with different projects.)
3. Will projects that are required to quantify climate/GHG impacts do so on an annual basis, or a project lifetime total, or both?
4. If all benefits cannot be monetized (e.g., for smaller projects or where data is insufficient), how will the county balance the costs of mitigation or adaptation against potential future benefits? What kinds of inputs will be needed into the budget process to support this?

In addition, budget items that entail significant (definition to be determined) GHG emissions, or significant costs related to GHG mitigation, should include a cost-benefit analysis that considers the social cost of carbon. The County (i.e., OMB with DEP, CEO, and other relevant entities) may need to provide guidance on what value or range of values to use for the social cost of carbon (for examples, see estimates developed by EPA).

Finally, budget items that include significant capital costs, or costs related to adaptation, should include some consideration of economic impacts of climate change and the benefits of adaptation measures,

e.g., projections of future operational costs with and without adaptation, taking climate impacts into account.

c. Tracking progress and increasing transparency

As the County begins to assess and incorporate climate impacts into its budget process, we recommend it consider adding standard reports to help track progress internally and share progress with external stakeholders. It will need to determine what reports/data should be made available to the public.

Examples of metrics that could be reported include:

1. Total number/\$ value of budget line items, County-wide
2. #/\$ value (and %) of budget line items reviewed for climate impacts
3. #/\$ value (and %) of budget line items identified as being relevant to climate change
4. #/\$ value (and %) of budget line items with beneficial climate change impacts (mitigation and adaptation)
5. #/\$ value (and %) of budget line items with adverse climate change impacts (in terms of mitigation and adaptation)
6. #/\$ value (and %) of budget line items that have adverse climate effects and include mitigation/adaptation measures
7. Net reduction in GHG emissions resulting from fiscal year budget (total and by program/project).

d. Building capacity and awareness

Training and capacity building will need to go hand in hand with the County's emerging climate change efforts. We suggest a range of ways to expand on the efforts identified in the near-term recommendations:

1. Roll out training ultimately to include all employees (starting with climate Ambassadors, and department leaders and key staff).
2. Convene regular (quarterly?) inter-departmental meetings to promote cross-department coordination, collaboration, and general sharing of ideas and expertise. Develop ways to build on and expand expertise already within County staff.
3. Identify and draw on additional technical expertise, engaging consultants as needed or hiring new employees with expertise.
4. Consider including climate change as a core competency to be written into applicable job descriptions at OMB and other departments.

D. FURTHER IDEAS AND CONSIDERATIONS

1. **Examine other jurisdictions' approaches more closely** to explore alternative or additional ways to **consider climate factors relative to other factors in budget decisions**. Identify and consider those most feasible for the County context. (See Appendix B for more information on other jurisdictions.)
2. **Further explore use of carbon fees, climate tagging, climate budgeting** (e.g., similar to Oslo), assessment of social costs of carbon. Consider ways of linking departments' achievement of climate targets to budget decisions.

3. Develop roles and processes for Climate Ambassadors, OMB, CEO, DEP, and other departments and agencies (seeking to include MCPS and MNCPP) to **form “clusters” around specific climate initiatives** (e.g., electrifying the bus fleet, tree canopy, land use, and highway and road planning). The CARP Matrix may be used to enable departments to see which departments have influence on specific areas. Explore and encourage **bundling of projects** to provide efficiencies, and co-benefits. (See also Appendix B for notes on New York City and its experience with resilience officers versus teams.)
4. **Consider systematically (e.g., using an internal County department workgroup) the financing of climate projects** (e.g., electrification, infrastructure/buildings). Identify **revenue-related initiatives**, look at revenue projections/needs for CARP. Identify and prioritize **revenue-neutral approaches**? Consider use of **innovative financing schemes** to fund future initiatives (e.g., social impact bonds, other approaches).
5. **Consider systematically (e.g., County department and agency workgroup?) how best to work with MCPS**. Reach out to new MCPS sustainability officer. Seek to engage with MCPS and identify opportunities to mitigate climate impacts associated with MCPS operations and capital projects. Does the School Board budget staff have basic training and an Ambassador on climate issues?
6. **Consider systematically (e.g., County department and agency workgroup?) land use/planning/zoning implications**. At a minimum, as a budget matter, consider whether the planning board has sufficient staff to assess the climate impacts of its decisions.
7. **Consider systematically (e.g., County broad-based workgroup?) impacts of proposed state legislation**, county advocacy, planning, and preparation. Ensuring that climate goals are set as part of the County’s legislative priorities or including language that empowers advocacy on specific goals will be important (Santa Monica offers an example of this sort of language, noted in Appendix B).

Attachments: Appendix A—Montgomery County Documents (Drafts); Appendix B—Information on Other Jurisdictions’ Approaches and Other Resources

APPENDIX A

MONTGOMERY COUNTY DOCUMENTS (DRAFT)

Note: Links are to drafts in the Workgroup's shared Google Drive folders and include Workgroup and County comments. (All Workgroup-related drafts are available here:

https://drive.google.com/drive/folders/1Z2awVnk_MTdc39eE4v2jAwkUB791icVB.)

CIP Checklist: https://docs.google.com/document/d/1Z7YapW3P_krf4mYUFvpi3LmFgftIkL6a/edit

PSP Climate Change Tab:

https://drive.google.com/drive/folders/1Z2awVnk_MTdc39eE4v2jAwkUB791icVB

Technical Workgroup Recommendations/Department Budget Matrix:

https://docs.google.com/spreadsheets/d/1OaNUFvKR7bgKDSQG1gkFcSZMyw_YG8Bo/edit#gid=849545022

APPENDIX B

INFORMATION ON OTHER JURISDICTIONS' APPROACHES AND OTHER RESOURCES

This appendix includes examples of local government actions in the U.S. and elsewhere that integrate climate considerations into their budgeting and planning. It also provides resources and information on a wide range of approaches, including financial investment decisions that support GHG mitigation, divesting from fossil fuels, and green bonds to fund climate action.

Integrating Climate into the Budgeting Process

Anne Arundel County (MD)

Excerpt from memo to department heads regarding climate resiliency in FY 21 Capital Budget:

Subject: Additional information for the FY 2021 Capital Budget

The CIP Oversight Committee will be adding 'Climate Resiliency' as an additional factor to consider in the review process for FY21. The purpose of this is to assess projects that may maximize climate resilience and aid in achieving a sustainable environment.

For the current proposed year, the application of this new initiative will be loosely structured, but a more formal integration will be seen in the FY22 CIP budget process. At this time we are asking you to include a brief narrative in your departmental presentation to the CIP Oversight Committee in January. Some points to consider addressing include in this narrative are as follows:

- Does the project include any operational redundancy (such as alternate power supply, multiple access points, etc.)?*
- Is this project vulnerable/resilient to nuisance flooding?*
- Is this project vulnerable/resilient to projected sea level rise?*
- What are the vulnerabilities to severe weather?*
- Are the building materials more or less vulnerable/resilient to climate events than standard practice would be?*
- For some projects, such as parks and roadways, does the project have the ability to act as a protective buffer to other assets during a climate event?*

The capital budget is foundational to achieving a climate resilience infrastructure, and your knowledge will aid in its success.

New York City (Mayor's Office)

- The Mayor's Office has two climate offices – Office of Climate Resiliency and Office of Climate Sustainability. The first is oriented toward resiliency (adaptation to the effects of climate change) and the second toward sustainability (greenhouse gas emission reduction). The City's Office of Management and Budget does not have official criteria or a formal process for factoring climate change considerations into budgeting. They do have plans and guidelines for resiliency and sustainability.

- The Office of Climate Resiliency has developed voluntary design guidelines (see below) for the City's capital projects and they are on their fourth iteration of the guidelines. Some departments have embraced the guidelines more than others, e.g., DEP (more) and DOT (less). The Mayor's Office is working with the City Council to make the guidelines mandatory; however, they will do it in phases to include a non-mandatory pilot phase with 10% of capital budgets going to pilot projects which use the guidelines, followed by a fully mandatory phase. The pilot phase will help them better understand the increased costs and the operational impacts of the design guidelines.
- The Office of Sustainability is responsible for the implementation of Local Law 97 and the Climate Mobilization Act (see below). They have sustainability ratings for buildings and a political commitment (not a legal requirement) to achieve net zero by 2050. NY City also has a NYC Retrofit Accelerator Program for private property owners to reduce GHG emissions from buildings. (see below).
- With regard to climate change knowledge, and expertise within departments and staff, it is hit or miss, but has increased over time and with experience. The City started about 5 years ago with a **resilience officer** in each department. However, it was "other duties as assigned" for existing personnel, and it was hard to get people to put in the time and there was divergent knowledge, expertise, and interest. Today, the departments are more likely to have **teams dealing with resiliency and sustainability** as a result of their experience undertaking challenging projects and as part of their regular jobs (in departments like sanitation, housing, transportation, as well and environmental protection). Even departments that struggle with budget issues have resilience/sustainability teams.
- NY City Resources Links:
 - Latest version of the NYC Climate Resiliency Design Guidelines: https://www1.nyc.gov/assets/orr/pdf/NYC_Climate_Resiliency_Design_Guidelines_v4-0.pdf
 - NYC's Plan for Carbon Neutrality: <http://onenyc.cityofnewyork.us/initiatives/achieve-carbon-neutrality-and-100-percent-clean-electricity/#:~:text=By%202050%2C%20New%20York%20City,emissions%20outside%20New%20York%20City.>
 - The Predecessor 80x50 Report: https://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/New%20York%20City's%20Roadmap%20to%2080%20x%2050_Final.pdf
 - NYC's Retrofit Accelerator: <https://www1.nyc.gov/site/nycaccelerator/index.page>
 - Local Law 97 of 2019, which imposed a limit on carbon emissions for all buildings: https://www1.nyc.gov/assets/buildings/local_laws/ll97of2019.pdf

Austin (TX)

- [Integrating Capital Improvements Planning With the Comprehensive Plan](#). American Planning Association. September/October 2018.
- Memo provides a detailed summary of the approaches and lessons learned in the City of Austin and a summary of action steps that can be used by planners seeking to integrate their comprehensive plan with capital improvements planning more fully. Same approaches can be applied to CARP.

- Aligned City priorities through the Invest in a Compact and Connected Austin priority program which calls for coordination of capital investments, incentives, and regulations to support Imagine Austin vision.
- Created the Capital Planning Office
- Developed a Long-Range Strategic Plan
- Comprehensive Infrastructure Assessment
- Rolling Needs Assessment
- Strategic Investment Analysis
- Trained and supported staff from all departments on Compact and Connected Austin
- More information on long-range CIP strategic plan:
<https://www.austintexas.gov/department/long-range-cip-strategic-plan>

Integrating Climate into CIPs

This section contains examples of various approaches to embedding resilience into the CIP process. Examples range from general goal setting, to community-based criteria setting, to strict design criteria for proposed projects. The desk-top research that led to these examples was conducted in fall/winter 2018. In a few cases, phone interviews were conducted with municipal staff (i.e. Baltimore, Anne Arbor, Boston). In brief, jurisdictions took the following approaches (additional information follows):

- Queen Anne's County, Maryland – general encouragement
- Boston, Massachusetts – OMB cross-checks and reinforces importance of incorporating climate
- Baltimore, Maryland – no formal process but more favorable if includes resilience
- Miami-Dade County, Florida – energy and climate performance criteria and recommendations proposed for an enhanced CIP process which includes assessment of adaptation pathways
- Ann Arbor, Michigan – interdepartmental teams propose projects and must follow a scoring sheet which has climate and sustainability as a fixed requirement
- Oakland, California – weighted scoring criteria developed in partnership with the community
- Highland Park, New Jersey – scoring criteria
- San Francisco, California – guidance for incorporating sea level rise into department proposals
- New York City, New York – design criteria

California Environmental Quality Act has environmental review requirements for local projects, as examples:

- <https://www.ca-ilg.org/hn-online-guide/environmental-review-and-health-impact-assessments>
- <https://www.marincounty.org/depts/cd/divisions/environmental-review>
- <https://www.cityoforange.org/385/Local-Environmental-Review-Procedures>

NOAA, the Association of State Floodplain Managers (ASFPM), and the American Planning Association (APA) are partnering on [Building Coastal Resilience Through Capital Improvements Planning](#). It may be valuable to follow up on this project to see if they have finalized their tools and resources. See below for a description of the project and partnership objectives. The partnership is designed to mainstream a variety of techniques to help practitioners incorporate climate, flood, and hazard data into local and regional CIPs. Goals of the project are to:

- Identify and develop tools, techniques, and guidance documents that can be used by practitioners involved in the capital improvement process

- Improve and enhance community capacity to incorporate data, research, and information related to coastal hazards and extreme weather into capital improvement planning
- Implement resilience and adaptation measures in coastal infrastructure and public buildings
- Understand and quantify the costs associated with the replacement, protection, or improvement of public buildings and infrastructure when coastal hazards and extreme weather are taken into account
 - Over the next 3 years ASFPM and APA will
 - Research and analyze techniques for incorporating info about extreme weather events, climate hazards, and changing ocean conditions into local and regional CIPs... heavy lit reviews
 - Engage with Toledo-Lucas County metro area and Savannah-Chatham metro area to pilot and ground-truth these techniques
 - Develop and deploy a wide array of materials, presentations, and guides to practitioner communities involved in the capital planning process

Budget Tagging

Resources include:

Knowing What You Spend: A guidance note for Governments to track climate finance in their budgets.

UN Development Program - Budget Tagging Guidance:

<https://www.undp.org/content/dam/undp/library/planet/climate-change/RBAP-DG-2019-Climate-Budget-Tagging-Guidance-Note.pdf>

The European Association of Cities in Energy Transition - Budget

<https://energy-cities.eu/publication/climate-mainstreaming-municipal-budgets/>

Santa Monica

In spring 2020 in response to the Coronavirus and pending budget cuts, the City of Santa Monica Office of Sustainability reviewed and tagged their general budget to identify their climate and sustainability efforts. This was an informal effort which was instrumental in justifying their sustainability and climate work to the City.

National Climate Change Expenditure Tagging Typology Code Manual

<https://climate.gov.ph/files/Typology%20Code%20Manual.pdf>

Organization for Economic Co-operation and Development, Paris, France:

www.oecd.org/environment/green-budgeting/

Climate Change Expenditure Tagging for Local Government

This manual explains the procedures for climate change expenditure tagging in local government. It is intended for the use of officials and technical staff of local governments.

<https://climate.gov.ph/files/CCET%20LGU%20Final.pdf>

Climate Budget Tagging: County-driven initiative in tracking climate expenditure

- https://www.climatefinance-developmenteffectiveness.org/sites/default/files/event/CFSDforum2015/climate/Climate%20Budget%20Tagging%20July%202015_DRAFT.pdf
- https://www.climatefinance-developmenteffectiveness.org/sites/all/themes/undp/images/capacity/RPLN%20E-bulletin%201%20CC%20Coding_Final.pdf

Establishing a Carbon Budget

Oslo, Norway – Climate Budget:

- <https://www.klimaoslo.no/wp-content/uploads/sites/88/2019/03/Climate-Budget-2019.pdf>
- <https://www.klimaoslo.no/wp-content/uploads/sites/88/2018/06/Climate-and-Energy-Strategy-2016-English.pdf>

Local Government Commission – Budgeting for Climate Resilience:

- <https://www.lgc.org/newsletter/budgeting-for-climate-resilience/>
- https://www.lgc.org/resource-library/?_sft_program_area=climate-change

South Florida Water Management District. “Carbon Budget Estimates of the Land Stewardship Program and the Use of South Florida Water Management District Lands.” South Florida Water Management District Report, 29 Nov. 2007: n.pag. Print.

Columbia Law School has done a lot of work regarding how to address climate impacts, and has compiled examples from different local jurisdictions:

<https://climate.law.columbia.edu/content/eia-guidelines-assessing-impact-project-climate-change>

Cities and “Budget-Based” Management of the Energy-Water-Climate Nexus: Case Studies in Transportation Policy, Infrastructure Systems, and Urban Utility Risk Management.

This article reviews eight cities implementing carbon budget programs in the UK and USA. Program review covers six major themes, including: (1) basic programmatic approaches; (2) baseline measurements; (3) goal-setting processes and emission and water use reduction targets; (4) assumptions in modeling effectiveness of interventions; (5) consequences for not meeting targets; and (6) cross-scale linkages with state/ federal programs. Review provides suggested improvements in three areas: measurement, modeling effectiveness of interventions, and governance.

<https://www.osti.gov/servlets/purl/1409728>

Climate-Mainstreaming Municipal Budgets

This guidance document covers a lot of ground from environmental budgeting and reporting, to green procurement, to earmarking local revenues and other financial instruments.

https://energy-cities.eu/wp-content/uploads/2019/01/climate-mainstreaming_budgets.pdf

Internal Carbon Pricing

Vancouver. The City of Vancouver adopted an [Internal Corporate Carbon Pricing Policy](#) in 2019. This policy is applicable to options analyses that use Life Cycle Cost Analysis. It has a financial and business justification as well as a plan for internal capacity building.

- [Metro Van carbon pricing policy](#) (revised with additional information)
- [Memo to Vancouver City Council about MetroVan carbon pricing](#)

Toronto. City of Toronto Final Report Internal Carbon Pricing Policy Toronto
<https://www.usdn.org/members/documents/32546>

Outlines the process, research, and scenario analysis used to develop an internal carbon pricing policy. Provides recommendations for implementation and next steps. Big takeaways:

- Pick a reasonable and defensible price, with predictable set price increases over time
- Start with a limited scope for the policy. Suggest testing the internal carbon price with a pilot low-carbon project, such as energy retrofits, examine learnings from this initial phase, gradually expand
- Emphasize internal engagement and education in order to socialize/ensure widespread acceptance among City staff

Ann Arbor. [An Internal Carbon Price for the City of Ann Arbor](#). The City of Ann Arbor's Office of Sustainability and Innovations worked with master's students from the School for Environment and Sustainability (SEAS) to explore the impacts of and design an internal carbon fee program. The program would place a price solely on Ann Arbor's municipal carbon emissions and is proposed to start in the upcoming 2021 fiscal year.

Short- term:

- Pilot an internal carbon fee with a \$5/metric ton starting price, beginning in FY2021.
- Work with the Finance department to create an internal service fund to collect fees from departments operating under the City's General Fund.
- Calculate and apply each department's internal carbon fee based on energy consumption and fleet fuel usage.
- Communicate internal carbon fee structure and fee impacts to each affected department using informational materials such as frequently asked questions (FAQ) documents or an energy report.
- Allocate program revenue to prioritize building energy audits, followed by the most relevant and important energy efficiency upgrades as determined by the audits and city needs at the time of investment.
- Following effective program implementation, explore potential expansion of the program to departments outside of the City's General Fund.

New Westminster (CA). [City of New Westminster](#), [Climate Action Budgeting Framework](#)

The following principles are proposed to guide staff's efforts to align City resources with Council's direction, and to help drive the 2020 budget process. These principles will also be utilized to frame Council's intent in the context of public engagement processes.

- City staff will prioritize climate emergency actions in departmental work plans that are expected to provide the greatest impact per dollar invested related to reducing GHGs, and/or increasing resilience or mitigation for the most vulnerable.

- The City will prioritize climate emergency initiatives over other non-climate related priorities in the Five-Year Financial Plan, including reallocation of Capital where necessary.
- The City will embed carbon pricing into the capital and operational decision-making processes (i.e., by quantifying and considering the carbon impacts of corporate activities going forward).
- The City will utilize creative and innovative methods to effect reduced emissions, while striving for affordability, equity and livability as an additional lens in developing the 2020 to 2024 Financial Plan.
- The City will explore implementing a Green Levy on Electrical Utility bills to fund climate emergency initiatives.

Palo Alto.

- Included a carbon adder in fleet cost-effectiveness analysis, using the Federal "social cost of carbon" (\$35/T now, going to \$50/T 2020).
- Adding it to green building / ZNE cost-effectiveness analysis.
- Exploring how to build it into capital budget and all city budgets.

State Efforts at Carbon Fees to Fund Implementation of Climate Efforts.

- Rhode Island – “Energize RI” once again helped introduced a bill (H5869 / S662) that levies a direct fee on carbon pollution. The bill imposes a \$15 per ton carbon fee, which increases annually until capping off at \$50 per ton. Seventy percent of the revenue will be rebated back to ratepayers, while the rest will be invested in environmental initiatives, like energy efficiency and climate resilience projects. Since RI is such a small state, the bill includes a trigger clause that prevents the fee from going into effect unless Massachusetts and at least one other New England state enacts carbon pricing. RI has committed funds to study carbon pricing.
- Maryland - ([SB912/](#)[HB1543](#)) Proposed a gradually escalating fossil fuel fee — starting at \$15/ton CO2 for non-transportation sources, and \$10/ton CO2 for transportation sources — to fund the goals above, while creating a Clean Energy Infrastructure Fund to pay for programs like electric vehicles (EV) charging stations, infrastructure resilience projects, solar panel installations, and carbon sequestration. (The fossil fuel fee measure would include a no pass-through provision that prohibits fossil fuel companies from passing this cost on to Maryland citizens.)
 - [The Greenhouse Gas Reduction Impact of a Carbon Pollution Charge in Maryland](#) (2018)
- Washington, D.C. - Councilmember Mary Cheh was expected to introduce a bill in July. Her initial proposal called for a \$10 fee per metric ton on carbon pollution that would increase to \$100 per ton by 2038.
 - <https://www.dcclimate.org/2018/05/29/cheh-carbon-pricing-draft/>
 - <https://climate-xchange.org/2018/06/05/carbon-pricing-is-coming-to-washington-d-c-heres-what-you-need-to-know/>

Local Funding and Financing Approaches

- [Funding and Financing Climate Action Plans 2019 USDN Innovation Fund Project Final Report](#)

- Funding and Financing Pathways map examples:
 - [Anchorage, AK Integrating Funding and Finance into CAP Map](#)
 - [Bend, Oregon Integrating Funding and Financing into CCAPs Map](#)
 - [Columbia, MO CAAP Funding Financing Map](#)
 - [Fremont, CA Integrating Funding and Financing into CCAPs Map](#)
 - [San Luis Obispo, CA Integrating Funding and Financing into CAPs Map](#)
 - [Oakland, CA Integrating Funding and Financing into ECAPs Map](#)

General Resources

- [Implementing Carbon Pricing at the Municipal Level](#) – Climate X Change white paper on cities role in carbon pricing.
- [Carbon Pricing Leadership Coalition](#) resource for all things carbon pricing, research, case studies, best practices, etc.

General Climate Planning

City of Chula Vista, CA – Climate Action Plan:

<https://www.chulavistaca.gov/departments/clean/conservation/climate-action-plan>

Colorado Greenhouse Gas Reduction Roadmap:

<https://www.colorado.gov/governor/news/3111-colorado-governor-releases-draft-ghg-pollution-reduction-roadmap-public-comment>

Helsinki, Finland (broad sustainability):

<https://www.nytimes.com/2020/10/14/todaysnyt/helsinki-makes-sustainability-a-guiding-principle-for-development.html?smid=em-share>